



November 16, 2000

Mr. Martin Lassen  
Johnson Matthey  
Catalytic Systems Division  
434 Devon Park Drive  
Wayne, PA 19087-1889

Dear Marty:

I am pleased to inform you that the VMEP Retrofit Program review committee has approved the Johnson Matthey CRT particulate filter for inclusion in the EPA VMEP retrofit program. In reviewing the application, the committee found the engineering analysis and supporting data to be thorough and comprehensive. The committee has approved the CRT for use in all highway heavy-duty diesel engines including 2 and 4-stroke, turbocharged or naturally aspirated engines provided the required operating criteria are met as described below. As a result, states will be allowed to claim state implementation plan (SIP) credits for retrofitting heavy-duty diesels with the CRT (subject to approval by the regional EPA offices). The credit states will be allowed to claim from retrofitting diesels with the CRT will be a 60 percent reduction in PM, CO, and HC emissions. Our understanding is that there will be approximately a 1 to 3 percent fuel economy penalty associated with the use of the Johnson Matthey CRT particulate filter.

The following operating criteria must be met in order for states to claim SIP credits for retrofitting engines with the CRT:

1. The engine must be operated with a fuel that contains a sulfur content of no more than 30 ppm.
2. The engine exhaust temperature must be at least 275 degrees C for approximately 40 to 50 percent of the duty cycle. (Johnson Matthey will ensure that these criteria are met for each application to be retrofitted. Johnson Matthey has indicated they will make the above determination by measuring the exhaust temperature profile of some candidate engines from each application while they are operated over the expected duty cycle.)

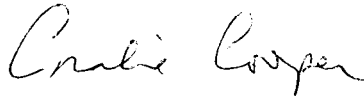
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3. The engine's exhaust must produce a NOx PM ratio of at least 8, with an optimum approaching 20. (Johnson Matthey has indicated they will make an assessment of the suitability of candidate engines, probably based upon the applicable emission standards or emission test data. Based on discussions with Johnson Matthey, it is our understanding that one can generally expect a heavy duty diesel engine in proper operating condition to maintain an acceptable NOx/PM ratio over its operating life.)
4. The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer;
5. Johnson Matthey installs a backpressure monitor and indicator light on all vehicles equipped with a CRT.

Information on the CRT product, percent reduction, applicable engines, and in-use testing program will be posted on the EPA Voluntary Diesel Retrofit website. As you know, Johnson Matthey will be responsible for completing the in-use testing that has been outlined in the application packet and for submitting all in-use testing data to EPA as a requirement of the program. This information should be submitted to Anthony Erb. He can be reached at (202) 564-9259.

Thank you for submitting your application to the EPA VMEP retrofit program.

Very truly yours,



Coralie Cooper  
Mobile Source Analyst

Cc: Gregory Green  
Jason Grumet  
Jim Blubaugh  
Anthony Erb  
Mitch Greenberg